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The performance of microscopic cervicitis for the detection of chlamydial infection

The diagnosis of chlamydial cervicitis by microscopy provides an opportunity for early treatment of infected patients and possible reduction in the incidence of pelvic inflammatory disease. Because of utilisation of insensitive methods for diagnosis of *Chlamydia trachomatis*,[1] the conclusion of previous studies on the definition of chlamydial cervicitis has been inconsistent.[2 3]

The aim of this study was to define the most sensitive and specific cut-off for polymorphonuclear cell (PMN) counts associated with chlamydial cervicitis diagnosed by a nucleic acid amplification test.

This was a prospective double blinded study on consecutive women older than 16 years and not menstruating attending the Department of GUM in Edinburgh for screening of sexually transmitted infections (STI) between May and September 2002.

Patients were tested for *Neisseria gonorrhoeae* diagnosed by inoculation of ano-genital materials on modified New York City culture media (MNYC) and for *C trachomatis* detected by testing endocervical material by ligase chain reaction (LCR). Gram stained and saline mount vaginal smears were utilised for the detection of bacterial vaginosis (BV) and *Trichomonas vaginalis* (TV) respectively. The diagnosis of BV was based on the modified Amsel's criteria.

Cervical smears were examined by GB who was blinded to the outcome of the clinical and microbiological tests of patients. The median of PMN counts in five non-adjacent ×1000 microscopy fields in Gram stained endocervical smears was calculated. Slides with more than 100 squamous cells per slide or more than 100 bacteria per ×1000 microscopy fields were deemed contaminated with vaginal flora and were excluded from analysis.

The χ^2 and Mann-Whitney U tests were conducted for categorical and non-parametric data respectively. A smear was positive only if it related to a positive LCR result.

Of the 138 consenting patients with valid cervical smears, 17 (12%) had chlamydial infections. None of the patients had infection with *N gonorrhoeae* or TV. Patients with chlamydial cervicitis had median PMN counts of 27 (interquartile range (4.5–34.5)) compared with that of 7 (1–18.5) among uninfected patients ($p<0.04$).

Table 1 shows the sensitivity and specificity of different PMN cut-offs in cervical smears for the detection of chlamydial infection. Limitation of cervical microscopy to women of 24 years or younger, those with BV, or women on oral contraceptive pill was not associated with better sensitivity or specificity of cervical smears (data not shown).

In our study, the prevalence of chlamydial infection among studied women was similar to that of reported elsewhere in United Kingdom.[4] The sensitivity of cut-off of ⩾5 PMN cells ×1000 microscopy field was higher than that reported by studies using enzyme immunoassay for diagnosis of *C trachomatis*. This could be due to the superior performance of LCR in diagnosis of chlamydial infection.[5] Increasing the cut-off of chlamydial cervicitis improved the specificity at the expense of reduction in the sensitivity.

Although some studies have suggested an association between chlamydial cervicitis and presence of BV,[6 7] our study did not show such a relation.

In conclusion, chlamydial cervicitis may be used for early treatment of patients who may not follow up their results in the settings with high prevalence of infection. In this respect a cut-off of ⩾5 PMN appears to have a reasonable sensitivity.

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doi: 10.1136/sti.2004.010082

Accepted for publication 3 March 2004

Table 1 The sensitivity and specificity of different PMN cut-offs in cervical smears for detection of chlamydial infection (total 138, prevalence of chlamydia 12.31%)

PMN cut-off criteria	No of cervical smears	Positive chlamydia test	Sensitivity (%)	Specificity (%)	PPV† (%)	NPV‡ (%)
⩾5 PMN/hpf*	85	13	76	40	15	92
⩾10 PMN/hpf	56	10	59	62	18	91
⩾15 PMN/hpf	48	10	59	69	21	92
⩾20 PMN/hpf	39	9	53	75	23	92
⩾25 PMN/hpf	31	9	53	82	29	92

*High power field: ×1000 microscopy.
†Positive predictive value.
‡Negative predictive value.

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Chlamydia trachomatis heat shock protein 60 (cHSP60) antibodies in women without and with tubal pathology using a new commercially available assay

Besides commercially available serological assays that detect antibodies to major outer membrane protein (MOMP)[1] and lipopolysaccharide (LPS) ''in-house'' chlamydial heat shock protein 60 (cHSP60) assays are extensively used in assessing serological responses to urogenital *Chlamydia trachomatis* infection. Although comparison of the different ''in-house'' assays is difficult owing to a lack of standardisation, there is a consensus among the users of these assays that the anti-cHSP60 responses in women increase with the severity of *C trachomatis* associated disease, leading to the suggestion that the high amino acid sequence homology between